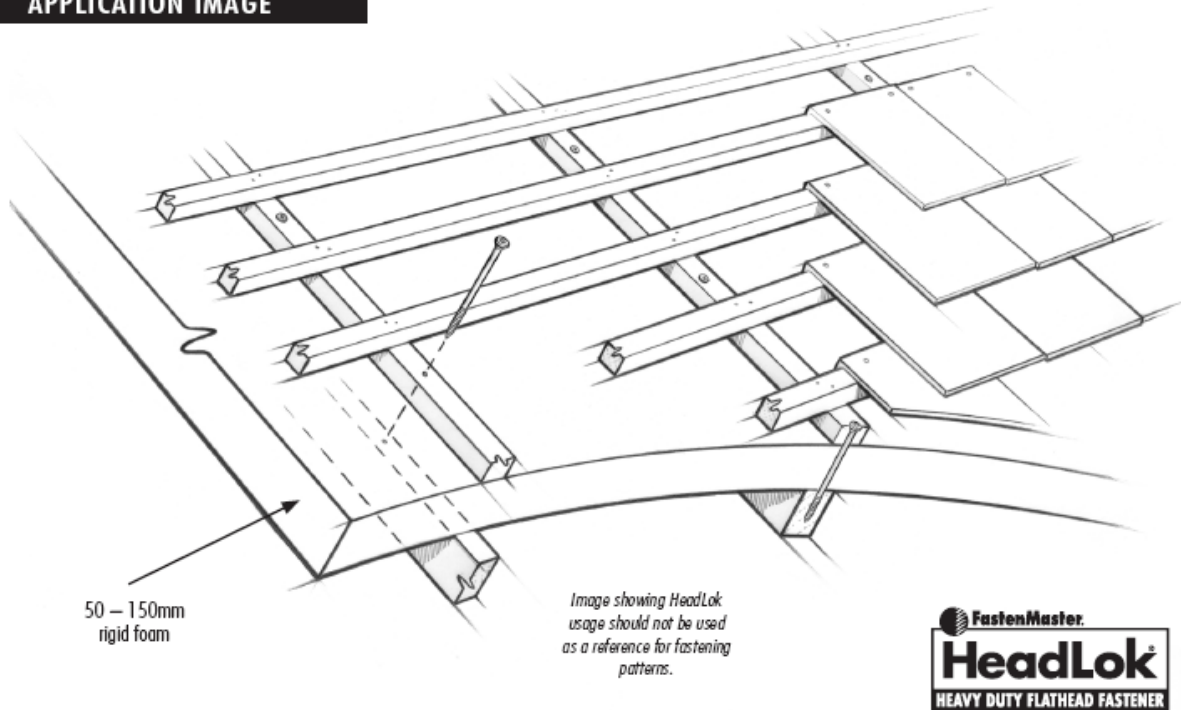


PITCHED WARM ROOFS

RECOMMENDATIONS FOR ATTACHING COUNTER BATTENS TO RAFTERS ON PITCHED WARM ROOFS UTILISING OVER-RAFTER RIGID FOAM INSULATION

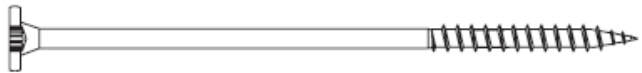
An increasingly common form of warm roof construction is utilising over-rafter rigid insulation. This method greatly improves the thermal insulation of the roof by avoiding cold bridges within the insulation layer. However, the presence of the insulation layer between the counter-battens and rafters greatly complicates the connection between them, requiring fasteners of lengths and strength capacities that preclude the use of most nails and wood screws.

APPLICATION IMAGE



HEADLOK FEATURES

- Wide Washer Head for greater pull through resistance in counter battens
- Aggressive 51mm thread engages rafter allowing for proper securing of layers
- Durable case-hardened 4.8mm shank to withstand increased torque and shear demands
- Internal patented drive system for easier installation
- Variety of lengths available for differing application thicknesses: 125mm, 150mm, 175mm, 190mm, 200mm, 225mm



When installed as instructed in this bulletin, the HeadLok™ Fastener provides an easier and stronger option for this connection.



Effective until January 1, 2010. Updated information must be obtained after this date.

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INSTALLATION PROCEDURE

- Select from TABLE 1 the appropriate fastener length based on the insulation thickness so that the threads fully engage the rafter (See figures 1 & 2).
- Centre the counter-batten over the underlying rafter by measuring and marking the rafter location onto the insulation surface first.
- Using a drill set to low speed, install the HeadLok screw through the centre of the counter-batten and perpendicular to the roof slope.
- Install fasteners at 400mm centres for all roof types within the wide range given under Fastener Spacing Notes below.
- Do not install fasteners closer than 18mm from counter-batten edge or 75mm from counter-batten end.
- Drive the fastener so that the top of the head is lightly embedded into the top surface of the counter-batten. To ensure proper performance, do not under apply or overdrive the fastener. (See figures 3-5)
- If a split occurs in the batten during installation, or the head fails to sink flush due to spinning free, install a supplemental fastener a minimum of 100mm from original location.

FASTENER SIZE SELECTION**TABLE 1**

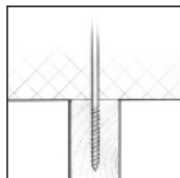
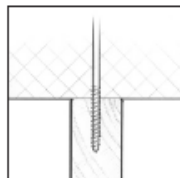
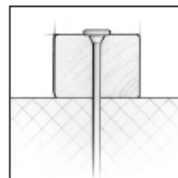
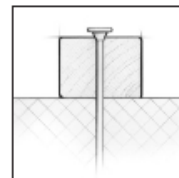
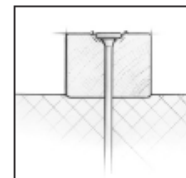
| | | | | | |
|--|-----|-----|-----|-----|-----|
| Thickness of over-rafter rigid insulation (mm) | 50 | 70 | 100 | 120 | 150 |
| Length of HeadLok fastener (mm) | 125 | 150 | 175 | 200 | 225 |

- Minimum length of HeadLok fastener = Thickness of counter-batten + Thickness of rigid insulation + 51
- Minimum thickness of counter-batten is 25mm
- The threaded length of the HeadLok fastener must be fully inserted into the rafter

FASTENER SPACING NOTES

- The following three conditions must be met to use the recommended 400mm spacings:
 - > Duo-pitch roofs whose ridge height does not exceed 15m above ground level
 - > Pitch is between 30° and 50°
 - > Roof cladding's weight (vertical on slope) is in the range 20-90 kg/m².
- The associated building may be at any location within mainland UK provided it is not a site of extreme topography, such as on an escarpment or near the ridge of a hill.
- In many cases, the 400mm spacing may be increased utilising less fasteners when designed by a chartered engineer or design professional in accordance with the methods set forth in our Specifier's Guide for Warm Roof Installations Utilising HeadLok.

The permissible strength data in this design sheet for HeadLok fasteners connecting counter-battens to rafters through rigid insulation board was derived, using safety factors appropriate to BS5268-2, from a bespoke testing programme.

THREAD ENGAGEMENTFigure 1
CorrectFigure 2
Incorrect**FASTENER HEAD DEPTH**Figure 3
CorrectFigure 4
IncorrectFigure 5
Incorrect**DUBLIN**

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